

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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Attachment No. 2

INITIAL STATEMENT OF REASONS**CALIFORNIA CODE OF REGULATIONS**

**TITLE 8: Chapter 4, Subchapter 4, Article 6, Section 1541.1
of the Construction Safety Orders**

Requirements for Trench Shoring Systems**PROBLEM ADDRESSED BY PROPOSED ACTION**

The proposed rulemaking action is being initiated at the request of the Division of Occupational Safety and Health (Division). The Division recognizes that protective shoring systems are necessary to prevent the movement of unstable or shifting ground, e.g., cave-ins, sloughing at the trench face, and other potentially catastrophic failures. Following a compliance inspection at an excavation site, the Division determined that the regulations in Section 1541.1 do not require the placement of vertical uprights as illustrated in Appendix D of this section. For this reason, the Division submitted a Form 9, dated April 29, 1999 to the Occupational Safety and Health Standards Board (Board) requesting a change in Section 1541.1. The proposed modification would require hydraulic shoring to be installed so that the upper section of the uprights extend to the top of the trench and the lower section is within two feet of the bottom of the trench.

Article 6 of the Construction Safety Orders contains regulations, tables, and illustrations depicting the different types of shoring, sloping/benching, and shield protective systems. Section 1541.1 discusses both specific and general requirements for the various protective systems that can be used to protect employees from unstable ground. Within this section, Appendix D contains Figures No. 1 through No. 4 and provides information and illustrations relative to the use and placement of aluminum hydraulic shoring in trenches.

The Division proposed change concerns Figures No. 1 and No. 2, which clearly indicates shoring uprights installed with the upper cross-brace section located within 18 inches of the top of the trench. In this configuration, the ends of uprights extend to the top of the trench. Installing shoring in this manner can prevent the collapse or sloughing of soil at the upper portion of the trench. The Division states that Figures No. 1 and No. 2 are not enforceable and that the current regulations in Article 6 do not require the installation of hydraulic shoring in this manner.

The Division recommends that the Board adopt language that is similar to the language in previously deleted subsection 1541(c)(6) (Register 82, No. 35, 8-28-82), which required uprights to extend to the top of the trench and to as near the bottom as possible, but not more than 2 feet from the bottom. Requiring hydraulic shoring within 2 feet of the bottom of the trench is

necessary to prevent loose soil from collapsing and injuring personnel working in the bottom of the trench. Soil is extremely heavy material and can weigh more than 100 pounds per cubic foot. As little as eight cubic feet (2 feet x 2 feet x 2 feet) of wet or rocky soil can weigh more than 800 pounds and represents a crushing hazard to feet and legs. Presently, neither Federal nor State regulations have such a stated requirement outside of the illustrations in the Appendix D Figures.

This proposal was developed from the wording of the previously deleted regulation and is intended to establish regulatory consistency between the illustrations in Figures No. 1 and No. 2 in Appendix D and the general requirements in Section 1541.1.

The Division submitted another Form 9 dated February 15, 2000, requesting that Section 1541.1, Appendix D, subsection (g)(7) be amended to allow equivalent materials other than plywood to be used with aluminum hydraulic shoring systems to prevent sloughing of the trench face. Routinely, underground contractors attach 4 feet by 8 feet plywood sheets to hydraulic shoring uprights to help prevent raveling or sloughing of loose soil from the trench face. Plywood when used in this capacity is not considered a structural component of the protective system. For this reason, the Division believes that the existing regulation is too restrictive and should be amended to allow for the use of other approved equivalent materials.

Board staff proposes to amend subsection (g)(7) and add language that would permit the use of equivalent material when the material can be approved in accordance with Section 1505(a) of the Construction Safety Orders. Employers using equivalent material, in lieu of the specified plywood, would be required to obtain such approval.

SPECIFIC PURPOSE AND FACTUAL BASIS OF PROPOSED ACTION

Section 1541.1 Requirements for Protective Systems

Section 1541.1 (a) through (g) contains the general requirements for various types of protective systems, including the criteria to be considered to effectively design sloping/benching systems and/or support/shield systems. Additionally, there are requirements for maintaining equipment in safe operation, installing/removing support systems, and protecting employees working in proximity to sloping/benching and shield systems. Appendices A through F provide data, diagrams, and general information about soil classifications, sloping and benching systems, timber shoring for trenches, aluminum hydraulic shoring for trenches, alternatives to timber shoring, and selection of protective systems.

New Subsection (h)

The proposal adds new subsection (h) and will ensure that the upper section or end of the uprights extend to the top of the trench and the lower section is within two feet of the bottom of the trench. The placement of shores in this manner will minimize sloughing of the soil at the top and bottom of the trench. The proposed amendment is necessary to provide written regulatory requirements consistent with the illustrations in Figures No. 1 and No. 2 of Appendix D and protects employees from unsafe conditions at the top and bottom of trench excavations.

Section 1541.1, Appendix D

Presently, subsection (g)(7) specifies that only plywood of a specific thickness and grade is used with aluminum hydraulic shoring systems. The proposed changes are necessary to establish an approval process to identify and use other equivalent material with aluminum hydraulic shores to prevent loose soil from sloughing into the trench. The existing regulation is too restrictive and should be amended to allow the public an opportunity to identify other suitable materials. This change is performance oriented and would permit the use of alternate materials when it is determined that the material is equivalent to the current standard.

DOCUMENTS RELIED UPON

1. Memorandum from the Division of Occupational Safety and Health to the Occupational Safety and Health Standards Board dated April 29, 1999, regarding the Division's proposed amendment to Section 1541.1, and attached Cal-OSHA form 9, Request for New, or Change in Existing, Safety Order.
2. Memorandum from the Division of Occupational Safety and Health to the Occupational Safety and Health Standards Board dated February 15, 2000, regarding the Division's proposed amendment to Section 1541.1, Appendix D, and attached Cal-OSHA form 9, Request for New, or Change in Existing, Safety Order.
3. Title 8, California Administrative Code, Chapter 4, Subchapter 4, Construction Safety Orders, Section 1541(c)(6), Register 82, No. 35--8-28-82, page 137.

These documents are available for review during normal business hours at the Standards Board Office located at 2520 Venture Oaks Drive, Suite 350, Sacramento, California.

DOCUMENTS INCORPORATED BY REFERENCE

None.

IDENTIFIED ALTERNATIVES THAT WOULD LESSEN ADVERSE IMPACT ON SMALL BUSINESSES

No adverse impact on small businesses is anticipated from the implementation of the proposed amendments. The proposed amendments are technical, clarifying and performance oriented revisions to the current requirements for trench shoring. Board staff anticipates no new or added effect upon an employer's operations that would result in an employer incurring additional costs. Therefore, no alternatives, which would lessen the impact on small businesses, have been identified.

SPECIFIC TECHNOLOGY OR EQUIPMENT

This proposal will not mandate the use of specific technologies or equipment.

COST ESTIMATES OF PROPOSED ACTION

Costs or Savings to State Agencies

No costs or savings to state agencies will result as a consequence of the proposed action (see "Identified Alternatives that Would Lessen Adverse Impact on Small Businesses"). The proposed amendments consist of ensuring that existing equipment is properly placed or located in the trench to ensure additional employee safety. Additionally the proposed amendments to Appendix D will allow the regulated public to select from a wider range of approved materials. Therefore, Board staff does not anticipate the proposal will have any significant impact, positive or negative, upon state agencies.

Impact on Housing Costs

The proposal will not significantly affect housing costs.

Impact on Businesses

This proposal will not result in a significant adverse economic impact on businesses, including the ability of California businesses to compete with businesses in other states. The proposed amendments ensure that existing equipment is properly placed or located in the trench to assure additional employee safety. Additionally the proposed amendments to Appendix D will allow the regulated public to select from a wider range of approved materials. Therefore, Board staff does not believe that the proposal will have a new or added effect upon the employer with respect to underground construction activities.

Cost Impact on Private Persons or Entities

The proposal will not require private persons or entities to incur additional costs in complying with the proposal.

Costs or Savings in Federal Funding to the State

The proposal will not result in costs or savings in federal funding to the state.

Costs or Savings to Local Agencies or School Districts Required to be Reimbursed

No costs to local agencies or school districts are required to be reimbursed. See explanation under "Determination of Mandate."

Other Nondiscretionary Costs or Savings Imposed on Local Agencies

This proposal does not impose nondiscretionary costs or savings on local agencies.

DETERMINATION OF MANDATE

The Occupational Safety and Health Standards Board has determined that the proposed regulations do not impose a local mandate. Therefore, reimbursement by the state is not required pursuant to Part 7 (commencing with Section 17500) of Division 4 of the Government Code because the proposed amendment will not require local agencies or school districts to incur additional costs in complying with the proposal. Furthermore, the regulation does not constitute a "new program or higher level of service of an existing program within the meaning of Section 6 of Article XIII B of the California Constitution."

The California Supreme Court has established that a "program" within the meaning of Section 6 of Article XIII B of the California Constitution is one which carries out the governmental function of providing services to the public, or which, to implement a state policy, imposes unique requirements on local governments and does not apply generally to all residents and entities in the state. (County of Los Angeles v. State of California (1987) 43 Cal.3d 46.)

The proposed regulation does not require local agencies to carry out the governmental function of providing services to the public. Rather, the regulation requires local agencies to take certain steps to ensure the safety and health of their own employees only. Moreover, these proposed regulations do not in any way require local agencies to administer the California Occupational Safety and Health program. (See City of Anaheim v. State of California (1987) 189 Cal.App.3d 1478.)

The proposed regulation does not impose unique requirements on local governments. All employers - state, local and private - will be required to comply with the prescribed standard.

PLAIN ENGLISH STATEMENT

It has been determined that the proposal may affect small business. The express terms of the proposal written in plain English have been prepared by the Board pursuant to Government Code Sections 11342(e) and 11346.2(a)(1) and are available from the agency contact person named in the notice. The informative digest for this proposal constitutes a plain English overview.

ASSESSMENT

The adoption of the proposed amendment to this regulation will neither create nor eliminate jobs in the State of California nor result in the elimination of existing businesses or create or expand businesses in the State of California.

ALTERNATIVES THAT WOULD AFFECT PRIVATE PERSONS

No alternatives considered by the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.